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7590 03/09/2012  
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EXAMINER

LEE, SIN J

ART UNIT

PAPER NUMBER

1722

MAIL DATE

DELIVERY MODE

03/09/2012

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

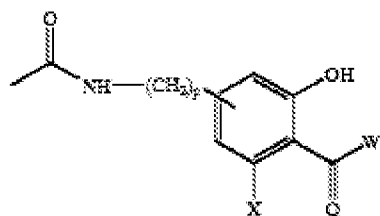
1. In view of the amendment (in which applicants stated that the "second more stable structural form" further comprises domain sizes that exceed  $10^5$  square nanometers ( $\text{nm}^2$ )), previous 112 second paragraph rejection is hereby withdrawn.

2. Upon reconsideration in view of applicant's argument, previous 102(b) rejection on claim 49 over Myerson'999 is hereby withdrawn. As stated by applicants, Myerson teaches the use of SAMS as surfaces for nucleation and growth of inorganic and organic crystals. Although Myerson'999 mentions those crystals being polymorphic, the reference does not teach or suggest that the SAMS chosen (such as rigid biphenyl thiols or alkanethiols) for its invention is polymorphic. Also, as argued by applicants, Myerson'999 does not teach present limitation as to the second more stable structural form of the SAM having domain sizes that exceed  $10^5$  square  $\text{nm}^2$ .

3. Present 103(a) rejection on claims 50 and 51 over Stolowitz et al'722 still stands. Applicants' argument against the rejection is the same as the argument they presented in applicants' Remarks filed on July 7, 2011. Applicants argue that there is nothing in the teaching of Stolowitz that would specifically lead a skilled person to those exact combinations of substrates and spacer groups as defined in claims 50 and 51. Also, applicants argue that there is nothing in the reference that would lead one skilled in the art to the particularly advantageous properties of the specific combinations of SAM and substrate given in present claims 50 and 51 or to realize the specific advantages that those combinations provides as there is no teaching in the reference of producing a SAM in situ by thermal treatment of a less stable structural form. Applicants

furthermore argue that the chain lengths of the aliphatic moieties in Stolowitz are generally too long for the effects describe on pg.6 of the present application.

However, as previously argued by the Examiner, Stolowitz gives *only five examples* for his free electron metal (two of which are gold and silver) and teaches that R is an alkylene group of 8-40 carbon numbers (half of those numbers being even numbers and the other half of those being odd numbers). In the absence of showing unexpected superior results of present invention over that of Stolowitz, it is still the Examiner's position that it would have been obvious to one skilled in the art to obtain Stolowitz's sensor surface comprising a gold substrate and a self-assembled monolayer (disposed on the gold substrate) having an organic compound X-R-Y, in which X is an anchor group of thiol, R is an alkylene group of 8 carbon atoms and Y is a group of the formula



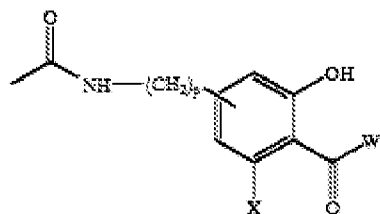
with a reasonable expectation of success.

Also, *in the absence of* showing unexpected superior results of present invention over that of Stolowitz, it would have been obvious to one skilled in the art to obtain Stolowitz's sensor surface comprising a silver substrate and a self-assembled monolayer (disposed on the silver substrate) having an organic compound X-R-Y, in which X is an anchor group of thiol, R is an alkylene group of 9 carbon atoms (since the

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alkylene group R is taught to have any number of carbon atoms chosen from 8, 9, 10 . .

. .40) and Y is a group of the formula



with a reasonable expectation of success. Although

applicants argue that present claims 50 and 51 limit the maximum space group lengths to C9/10 and that the chain lengths of the aliphatic moieties in Stolowitz are too long, Stolowitz's chain length range of 8-40 overlaps with present chain length range of 1-10 and thus renders present range *prima facie* obvious *in the absence of* showing unexpected superior results of present invention (i.e., proving the criticality of the present range) over that of the prior art. In the case "where the [claimed] ranges overlap or lie inside ranges disclosed by the prior art," a *prima facie* case of obviousness would exist which may be overcome by a showing of unexpected results, In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976).

Applicants argue that Stolowitz does not teach the transition of the SAM from a less stable structure to a more stable structure. However, present claims 50 and 51 are written in product by process claim language ("wherein said SAM is comprised by aryl or rigid alicyclic moiety species in *a substantially stable structural form derived, in situ, by thermal treatment from a less stable structural form*"). See MPEP 2133. It is still the Examiner's position that Stolowitz's sensor surface comprising a gold substrate and a self-assembled monolayer (disposed on the gold substrate) having an organic

compound X-R-Y, in which X is an anchor group of thiol, R is an alkylene group of 8 carbon atoms and Y is a group of the formula shown above, teaches presently claimed substantially stable SAM of claim 50. It is also the Examiner's position that Stolowitz's sensor surface comprising a silver substrate and a self-assembled monolayer (disposed on the silver substrate) having an organic compound X-R-Y, in which X is an anchor group of thiol, R is an alkylene group of 9 carbon and Y is a group of the formula shown above, teaches present substantially stable SAM of claim 51.

***Allowable Subject Matter***

4. Claims 25-35, 49, 52 and 53 are allowed for the reasons already indicated.
5. Claims 54-57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Stolowitz does not teach or suggest present polycyclic aryl group of claims 54-55 or present aryl moiety as listed in present claims 56-57.
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

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/Sin J. Lee/  
Primary Examiner, Art Unit 1722  
March 8, 2012